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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,394

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Zhenya Alexander Yourlo

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

SENGI, BEHROOZ M

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,394

Applicant(s)

YOURLO, ZHENYA ALEXANDER

Examiner

Behrooz Senfi

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 6,7 and 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-10,16-35,43-62 and 70-80 is/are rejected.
- 7) ☒ Claim(s) 36-42 and 63-69 is/are objected to.
- 8) ☒ Claim(s) 6,7 and 11-15 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 1 recites the limitation said second image is encoded according to said predetermined format in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

2. Claims 21 and 48 are objected to because; the limitation “flat color” as cited in the claims, is not defined in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 5, 8 – 10, 16 - 25, 27 - 35, 43 – 52, 54 – 62, 70 – 75 and 77 - 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Gu (US 6,075,875).

Regarding claims 1 and 43, Gu '875 discloses “a method of encoding a sequence of images for transmission over a communication network” (i.e. figs. 1 and 37a- 37f and col. 7, lines 34 – 40 for transmission over network), method comprising the steps of: (i) “rendering an first image from a object-based computer graphics application” and (iii) “rendering an second image from object-based computer graphics application” (i.e. fig. 3a, transformation 96 for

rendering images “i.e. first and subsequent image”, col. 12, lines 27 – 36 and lines 64 – 68) and (ii) “encoding first image according to a predetermined encoding scheme” (i.e. MPEG) and (iv) “identifying changes between the first image (i.e. fig. 3a, 108) and the second image (i.e. subsequent image) from a change indicating output (i.e. fig. 3a, 110) of said computer graphics application and (v) using the identified changes to determine a manner in which the second image is encoded according to the predetermined format” (i.e. col. 3, lines 13 – 24) and (vi) repeating steps (iii) to (v) for each subsequent image of said sequence, reads on (i.e. fig. 3a, loop-back 112, 120, 122 126, 128 and 98).

Regarding claim 2, Gu ‘875 discloses “computer graphics application Out puts a pixel-based representation of each said image to a buffer and the encoding, at least for the first image, operates upon said pixel-based representation and for the second and subsequent images upon at least the change indicating output” (digital image is made of pixels also fig. 6, shows that the process is pixel based) and as for the change indicating output, see (i.e. fig. 3a, encoder process 64, element 110).

Regarding claim 3, the claimed “wherein the change indicating output comprises information indicating an extent of change in the pixel-based representation in the buffer thereby enabling the encoding according to the predetermined encoding scheme of substantially only those pixels that have changed” (encoding process 64 of fig. 3a, are pixel based, which encodes pixels that have been changed).

Regarding claims 4 and 44, the claimed “hierarchical representation of each image and change indicating output comprises information indicating an extent of change between images of the corresponding hierarchical representations” are discussed earlier with respect to claims 2 and 3 and as for “hierarchical representation” see (i.e. col. 4, lines 24 – 25).

Regarding claims 5, 8 – 10, 22 and 49, the claimed “predetermined Encoding scheme comprises MPEG encoding and transmission over network” reads on (i.e. col. 7, lines 37 – 39, and col. 8, lines 64 - 66), and “an encoder for encoding a series of images into a bit-stream, each image being rendered from a graphics object application characterised in that, the encoder is constrained to operate according to a plurality of inputs describing the image, where the format of the input is known by the encoder, in claim 8” (i.e. fig. 3, encoder 112, col. 7, lines 63 col. 8, lines 8), “wherein one of the input comprises a first change input representing those portions of a pixel map of a current image that have changed relative to an immediately preceding image, in claim 9” (i.e. col. 10, pixel mapping lines 40 – 44).

Regarding claim 16, the limitations claimed are substantially similar to claim 1, therefore the grounds for rejecting claim 1 also applies here. As for “optimize encoding of the image” see (col. 25, lines 45 – 50).

Regarding claims 17 – 21 and 45 - 48, “wherein the representations comprise at least one hierarchical compositing tree, in claim 17” reads on (i.e. col. 4, lines 24 – 26), and “wherein at least one of the changes is other than a

pixel map representation of the current image, in claim 18” reads on (col. 10, lines 34 – 40), and “transformation matrix of changed regions, in claim 19” reads on (col. 12, lines 10 – 14) and “content comprises at least one of plane fill data and/or run-length encoded data used to form the current image and the information indicates that the content forms a region of flat color in the current image” reads on (i.e. fig. 3, 114 and abstract, lines 7 – 9 for color).

Regarding claims 23 – 25, 27 – 29, 50 – 52 and 54 - 56, “background region or a foreground region, in claim 23” reads on (i.e. col. 12, lines 32 – 35) and “change comprises information regarding a position and area of a region of the current image that has changed, in claim 24” reads on (i.e. fig. 3a, 74, col. 2, lines 8 – 59) and “content comprises run-length data, encoding comprises for each run of data in the current image a single conversion and encoding of a pixel value, in claim 27” (i.e. fig. 3a, 114) and “storing an encoded representation of at least the current image for use in an encoding of a subsequent image in the sequence, in claim 28” reads on (i.e. fig. 1, CPU 22, register 34) and “encoded representation comprises a plurality of separately encoded discrete portions” (i.e. col. 12, lines 30 – 32).

Regarding claims 30 and 57, the claimed “change indicating a portion of a rendered current image having changed due to motion in the sequence, and encoding comprising determining those discrete portions that require update in view of the change, encoding rendered pixel value output from the computer graphics application corresponding to the change discrete portion as

replacement ones of the portion, and combining the replacement portions with remaining portions of the preceding encoded image to form a current encoded image” reads on the fact that Gu ‘875 reference, detect the changes between two images and encodes the differences/changes between the current image and the previous/reference encoded image and combine the images to form a current image (i.e. fig. 3a).

Regarding claims 33 – 35 and 60 - 62, the claimed “if the current image is identical to the preceding image, the encoding comprises encoding a special image indicator representative of no-change in the sequence at the current image” (i.e. col. 2, 9 – 15) and “raster scan, in claim 34” reads on (i.e. fig. 7a, 212) and “encoding forms an MPEG representation of each image, in claim 35” are discussed earlier with respect to claim 5.

Regarding claim 70, the limitations claimed are substantially similar to claim 1 and are apparatus of the method of claim 1, therefore the grounds for rejecting claim 1 also applies here.

Regarding claims 71 – 75, the limitations claimed are substantially similar to claims 17 – 20, therefore the grounds for rejecting claims 17 – 20 also applies here.

Regarding claims 77 – 80, the limitations claimed are substantially similar to claims 22 – 25, therefore the grounds for rejecting claims 22 - 25 also applies here.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 26, 53 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,075,875) in view of Silverbrook et al (US 6,636,216).

Regarding claims 26 and 53, Gu '875 teaches "content comprises at least one of plane fill data and/or run-length encoded data used to form the current image and the information indicates that the content forms a region of flat color in the current image" reads on (i.e. fig. 3, 114 and abstract, lines 7 – 9 for color). Gu '875 does not particularly teach content comprises "a plane fill, encoding of a single pixel value representing the current image". However, such features are well known and used in the prior art of the record as evidenced by Silverbrook '216 (i.e. fig. 33, col. 47, lines 45 – 48, col. 100, lines 35 – 39). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to use the teaching of Silverbrook to modify the encoding process of Gu, to represent the entire image by a single pixel (col. 47, lines 40 – 47 of Silverbrook).

Regarding claim 76, combination of Gu and Silverbrook teach "plane fill and run-length encoded data" (i.e. fig. 3a, 114 of Gu, and fig. 33 of Silverbrook).

Regarding claims 31 – 32 and 58 - 59, the limitations "storing encoded version of the first image with a flag identifiable by the indicated change, in claim

31” and “ encoded first image is stored as a plurality of separately encoded portions, in claim 32” are well known in the prior art of the record, like scene change detection. Official Notice

Allowable Subject Matter

7. Claims 36 – 42 and 63 – 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Behrooz Senfi whose telephone number is (571)272-7339.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571)272-7331.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

B.M.S. B.M.S.

5/14/2005


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600